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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,199	08/06/2003	Michael J. Hind	YOR920020048US1 (13310)	8332
23389	7590	04/20/2006	EXAMINER	
SCULLY SCOTT MURPHY & PRESSER, PC 400 GARDEN CITY PLAZA SUITE 300 GARDEN CITY, NY 11530			CHEN, KOU YI	
			ART UNIT	PAPER NUMBER
			2193	

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/635,199	Applicant(s) HIND ET AL.	
	Examiner Kou-Yi K. Chen	Art Unit 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/11/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the application filed on August 6, 2003.
2. Claims 1-8 are pending in the application.

Specification

3. The abstract of the disclosure is objected to because on the sixth line, "A plurality of different a profile consumers", the "a" should be deleted. Correction is required. See MPEP § 608.01(b).
4. The disclosure is objected to because of the following informalities: On page 4, paragraph 0006, "The selector 120 then transmits the selected one or more selected actions 112 actions to the applicator 122", the second 'actions' after 112 should be deleted. Appropriate correction is required.
5. The disclosure is objected to because of the following informalities: On page 4, paragraph 0006, "During a subsequent predetermined time interval, the profiling agent 102 may collect another profile 110", the profiling agent should be 104, see FIG. 1 and the second sentence of this paragraph. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Romer et al. "Instrumentation and Optimization of Win32/Intel Executables Using Etch", 08/1997 (hereinafter "Romer").

As Per claim 1

Romer teaches:

A method for normalizing a profile collected for an executing application to account for one or more actions applied to the executing application after the profile was collected ("Etch provides a framework for modifying executables for both measurement and optimization. Etch handle the complexities of the Win32 executable file format and the x86 instruction set, allowing tool builders to focus on specifying transformations. Etch also handles the complexities of the Win32 execution environment, allowing tool users to focus on performing experiments. This paper describes Etch and some of the tools that we have built using Etch, including a hierarchical call graph profiler and an instruction layout optimization tool" in Abstract, and also "Finally, when the program completes, the analysis module is given an opportunity to run analysis routines required to process the data collected during execution" in page 2, last sentence).

(a) predicting an impact of applying the one or more actions to the executing application by utilizing the profile and the one or more actions ("A post-processing tool could then

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predict the application's execution time based on the cache miss rates and hypothetical processor, cache, and memory speeds." In page 4, 2.1 Measurement, lines 6-9); and (b) adjusting the profile to form a normalized profile according to the predicted impact ("Etch also provides facilities for rewriting an executable in order to improve its performance." in page 4, 2.2 Optimization, lines 1-2).

As Per claim 2

Romer teaches:

A system for normalizing a profile collected for an executing application to account for one or more actions applied to the executing application after the profile was collected (see page 2, 2. The Model, first paragraph, "Etch is a system framework that supports integration of nearly any type of measurement and optimization tool, similar to systems such as ATOM and EEL", and in Abstract, "Etch provides a framework for modifying executables for both measurement and optimization", and also in page 4, 2.2 Optimization, "Etch also provides facilities for rewriting an executable in order to improve its performance.")

a predictor for predicting an impact of applying the one or more actions to the executing application by utilizing the profile and the one or more actions (see page 4, 2.1 Measurement, "A post-processing tool could then predict the application's execution time based on the cache miss rates and hypothetical processor, cache, and memory speeds."); and

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an adjuster for adjusting the profile to form a normalized profile according to the predicted impact (see page 4, 2.2 Optimization, "Etch also provides facilities for rewriting an executable in order to improve its performance. For example, it is possible to reorder instructions to optimize code layout for cache and VM behavior.").

As Per claim 3

Romer teaches:

A method for adjusting a profile collected for an executing application to account for one or more actions applied to the executing application to improve detection of phase shifts in the executing application after the profile was collected (see Abstract, "Etch provides a framework for modifying executables for both measurement and optimization. ... This paper describes Etch and some of the tools that we have built using Etch, including a hierarchical callgraph profiler and an instruction layout optimization tool", and page 4, under 2.2 Optimization, last sentence, "Figure 4 shows the reduction in instruction cache misses and execution time (in cycles) for a collection of popular Win32 programs that have been optimized for code layout using Etch on a 90Mhz Pentium");

(a) collecting a first profile for the executing application; (b) predicting an impact of applying the one or more actions to the executing application by utilizing the first profile and the one or more actions; (c) adjusting the profile to form a normalized profile according to the predicted impact; (d) applying the one or more actions to the executing application; (e) collecting a second profile for the executing application; and (f) detecting a phase shift in the executing application by utilizing the normalized profile and the

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second profile; (see Figure 4, different profile produced different performance results, also see page 4, 2.1 Measurement, "A post-processing tool could then predict the application's execution time based on the cache miss rates and hypothetical processor, cache, and memory speeds", and see page 4, 2.2 Optimization, "Etch also provides facilities for rewriting an executable in order to improve its performance.", and page 6, second paragraph, "Figure 7 shows the output from an opcode histogram tool that displays the distribution of instruction types for an MPEG player. If Etch is being used to optimize performance, the user may instruct Etch to apply a performance-optimization transformation. For example, Etch may rewrite the original binary to change the layout of data or code in order to improve cache or virtual memory performance, as was illustrated in Figure 4").

As Per claim 4

Romer teaches:

A system for adjusting a profile collected for an executing application to account for one or more actions applied to the executing application to improve detection of phase shifts in the executing application after the profile was collected (see claim 2 rejection):

a profiling agent for collecting a first profile and a second profile for the executing application; (see page 2, last paragraph in section 2. The Model, "Etch separates the process of instrumenting and tracing an executable into two phases: an instrumentation phase and an analysis phase. Similarly, each tool is split into two components, an instrumentation module and an analysis module. During the instrumentation phase,

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Etch processes the program in order to “discover” the components of the program, e.g., instructions, basic blocks, and procedures”, also see page 3, Figure 2 and description, “Figure 2: As Etch discovers program components during program instrumentation, it invokes instrumentation code for that component: once before the component is written to the new executable, and once after. The implementations of the Instrument* routines may direct Etch to add new code before and/or after the specific component.”).

a predictor for predicting an impact of applying the one or more actions to the executing application by utilizing the first profile and the one or more actions (see claim 2 rejection).

a phase shift detector for detecting a phase shift in the executing application by utilizing the normalized profile and the second profile (see claim 3 rejection).

As Per claim 5

Romer teaches:

A method for adjusting a profile collected for an executing application to account for one or more actions applied to the executing application to determine whether there is improvement in the execution of the executing application after the profile was collected (see claim 1 rejection):

(a) collecting a first profile for the executing application; (b) selecting and applying one or more actions to the executing application; (c) predicting an impact of applying the selected one or more actions to the executing application by utilizing the first collected profile and the one or more actions; (d) adjusting the first profile to form a normalized

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profile according to the predicted impact; (e) collecting a second profile for the executing application; (f) evaluating the second profile against the normalized profile to determine whether there is expected improvement in the execution of the executing application; see claim 3 rejection.

(g) applying one or more actions to undo the one or more actions applied to the executing application if there is no expected improvement in the executing application (see page 4, section 2.2 Optimization, first paragraph, "Etch also provides facilities for rewriting an executable in order to improve its performance. For example, it is possible to reorder instructions to optimize code layout for cache and VM behavior").

As Per claim 6

Romer teaches:

A system for adjusting a profile collected for an executing application to account for one or more actions applied to the executing application to determine whether there is improvement in the execution of the executing application after the profile was collected (see claim 2 rejection):

a profiling agent for collecting a first profile and a second profile for the executing application; a selector for selecting one or more actions to apply to the executing application (see claim 4 rejection);

a predictor for predicting an impact of applying the selected one or more actions to the executing application by utilizing the first collected profile and the one or more actions (see claim 2 rejection);

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an adjuster for adjusting the first collected profile to form a normalized profile according to the predicted impact (see claim 2 rejection);

action evaluator for evaluating the second profile against the normalized profile to determine whether there is expected improvement in the execution of the executing application (see page 1, section1. Introduction, third paragraph, " Etch provides all three groups with measurement tools to evaluate performance at several levels of detail, and optimization tools to automatically restructure programs to improve performance, where possible");

applicator for applying the selected one or more actions and one or more actions that undo the applied one or more actions if there is no expected improvement in the executing application (see page 6, second paragraph, "If Etch is being used to optimize performance, the user may instruct Etch to apply a performance-optimization transformation").

As Per claim 7

Romer teaches:

A method for adjusting a profile collected for an executing application to account for one or more actions applied to the executing application to improve execution of the executing application after the profile was collected (see claim 1 rejection):

(a) applying a first selected action to the executing application based on the collected profile; (b) predicting an impact of applying the first selected action to the executing application by utilizing the collected profile and the first selected action; (c) adjusting the

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collected profile to form a first normalized profile according to the predicted impact; (d) applying a second selected action to the executing application based on the first normalized profile or a subsequently normalized profile; (e) predicting an impact of applying the second selected action to the executing application by utilizing the first normalized profile and the second selected action; (f) adjusting the first normalized profile to form a second normalized profile according to the predicted impact; see claims 1-6 rejections.

(g) repeating steps (d)-(f) for the second normalized profile and every subsequently normalized profile and selected action (Romer's disclosure repeats the performance analysis for various profiles and produces different performance results, see Figure 4 and claim 3 rejection).

As Per claim 8

Romer teaches:

A system for adjusting a profile collected for an executing application to account for one or more actions applied to the executing application to improve execution of the executing application after the profile was collected (see claim 2 rejection):

a predictor for predicting an impact of applying a first selected action to the executing application by utilizing the collected profile and the first selected action (see claim 2 rejection);

an adjuster for adjusting the collected profile to form a first normalized profile according to the predicted impact (see claim 2 rejection);

an applicator for applying the first selected action to the executing application based on the collected profile, applying a second selected action to the executing application based on the first normalized profile and repeatedly applying each selected action from each subsequently normalized profile to the executing application (see claim 6 rejection).

Conclusion

8. The prior art made of record, and not relied upon, is considered pertinent to applicant's disclosure.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kou-Yi K. Chen** whose telephone number is **571-272-8592**. The examiner can normally be reached **from 8:30 am to 5:00 pm on M-F**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on 571-272-3719.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kou-Yi K. Chen

Assistant Examiner

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